



## COLLIDER-ACCELERATOR DEPARTMENT

Title: EMS Training For Cryogenic Systems Maintenance

Prepared by: M. Van Essendelft

Group: ESH&Q

### Approvals

\_\_\_\_\_ *Signature on File* \_\_\_\_\_ Date: \_\_\_\_\_

ESH&Q Division Head

\_\_\_\_\_ *Signature on File* \_\_\_\_\_ Date: \_\_\_\_\_

Collider-Accelerator Department Chairman

(Indicate additional signatures)

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☐ x FS Representative: \_\_\_\_\_ Date: \_\_\_\_\_

☐ x Radiological Control Coordinator: \_\_\_\_\_ Date: \_\_\_\_\_

☐ x Chief ME: \_\_\_\_\_ Date: \_\_\_\_\_

☐ x Chief EE: \_\_\_\_\_ Date: \_\_\_\_\_

☐ x Environmental/P2 Coordinator: \_\_\_\_\_ Date: \_\_\_\_\_

☐ x QA Manager: \_\_\_\_\_ Date: \_\_\_\_\_

x ☐ Other: \_\_\_\_\_ *Signature on File* \_\_\_\_\_ Date: \_\_\_\_\_

## Environmental Training Package for Cryogenic System Maintenance

This package has been designed to aid in the delivery of required job-specific training for the following activities identified in the environmental process evaluation

- Vacuum pump and compressor maintenance
- Coalescer, Mist Eliminator and Molecular Sieve maintenance

Your position has been determined to have a potential to significantly impact the environment. Thus, C-A Department Management has prepared the questions & answers on the following pages for your specific work/processes.

This environmental material is incorporated into your current job and procedure training. If you have specific questions about this information after you have read the material, contact the C-A Department ESH&Q Division Head, Ray Karol (<mailto:rck@bnl.gov>).

You may keep this material as a handout and use it as a reference aid.

This specific training course is linked to your job-training assessment (JTA). You must read and acknowledge this material as part of the qualification to perform metal cleaning operations. Please fill out the Read and Acknowledgement form and return it promptly.

[Read & Acknowledgement Form](#)

## **Environmental Process Evaluation Title: Cryogenic System Maintenance**

**Environmental Aspects:** Industrial Waste Generation, Atmospheric Discharge, Storage/Use of Chemicals, Water Consumption, Power Consumption, Environmental Noise

### **Contacts for Further ESHQ Information:**

Associate Chair for ESHQ, E. Lessard  
Head of ESHQ Division, R. Karol  
Environmental Coordinator, J. Scott  
Environmental Compliance Representative, M. VanEssendelft  
ESH Coordinator A. Etkin  
Radiological Control Division Representative, P. Bergh  
Procedures Coordinator, L. DiFillipo  
Quality and Assessment Manager, D. Passarello  
Self Evaluation Program, A. Piper  
Source Custodian, P. Cirnigliaro  
Tier 1 Coordinator, A. Piper  
Training Manager, J. Maraviglia  
Training Records, A. Luhrs

**Course Objective:** Because your work activities have been identified as having significant potential to impact the environment, this course has been designed to provide you with the job-specific information that you must know to protect the environment.

1) What potential impacts to the environment are associated with your activities?

- Cleaning and maintenance operations associated with cryogenic systems generate industrial wastes. The following materials used in your work may have adverse impacts if improperly handled:
  - oily water
  - oily rags, diapers, o-rings, gaskets and shaft seals
  - used oil or heat transfer fluid
  - saturated filters

2) What consequences may result if your operations were to impact the environment?

- Mismanagement of oil wastes could contaminate the environment and incur regulatory penalties
- Improper release of wastes can create loss of the regulator and public trust

3) What benefits or positive effects would you notice with improved environmental performance?

- Safer, cleaner workplace
- Clear roles and responsibilities
- Improved relationship with regulators and the public
- Control of disposal costs
- Prevention of remediation costs

4) What role and responsibility do you have for these potential impacts and environmental performance?

My responsibilities are

- To ensure industrial wastes are handled according to C-A procedures
- To take action when controls fail (such as calling x2222 if a spill occurs; if calling from a cell phone, dial (631) 344-2222)
- To contact supervision if you are unsure of how to perform the work or if the procedures are unclear or incorrect

5) What controls or procedures are implemented to reduce the potential for emergency?

- [C-A OPM 8.20](#), Handling and Disposing of Hazardous Waste
- [C-A OPM 8.22](#), Handling and Disposal of Non-Hazardous and Recyclable Waste
- [C-A OPM 8.20.1](#), C-A Hazardous Waste Trailer (HWT) (90 Day Accum. Area)
- [C-A OPM 1.15](#), Liquid, Airborne Effluents
- [C-A OPM 1.14](#), General Requirements for Liquid Storage
- [C-A OPM 2.28](#), Enhanced Work Planning
- Chemical Management System
- Tier I program and self-evaluations

6) How would you respond in an emergency to reduce the potential for environmental impact and what actions could be taken to mitigate the event?

- See [C-A OPM 3.0](#), Local Emergency Plan for the C-A Department
- See [C-A OPM Chapter 10](#), Occurrence Reporting
- Call Spill Response Hotline – X2222 (if calling from a cell phone, dial (631) 344-2222)

7) What pollution prevention and waste minimization techniques have been or could be considered to reduce or eliminate the potential to impact the environment?

- Potential waste minimization alternatives include utilizing a squeegee or cloth rags provided by a laundering service instead of disposing of rags
- Chemicals utilized for cleaning are dispensed from aerosol cans or disposable spray bottles. Empty containers are discarded in the regular trash. Potential waste minimization alternatives include purchasing chemicals and cleaners in bulk or concentrates, and utilizing reusable plastic trigger bottles instead of aerosol cans.
- Burning used oils or heat transfer fluid. Contact the C-A Environmental Coordinator for the appropriate disposal path.
- Transfer used charcoal to a contractor who can utilize the material. Contact the C-A Environmental Coordinator for assistance

Suggestions or comments about pollution prevention or waste minimization are always welcome by C-A management.

8) Are there any key Environmental-specific Competency Requirements for this position?

- None

**Additional Environmental Information:**

Click on the items below to learn more about C-A Cryogenic Systems Maintenance.

- [Process Assessment](#) for C-A Cryogenic Systems Maintenance
- [Environmental Management Program](#) for C-A Cryogenic Systems Maintenance
- [Operational Control Form](#) for C-A Cryogenic Systems Maintenance